

**WHAT IS CLAIMED:**

1           1.     An implant adapted to be placed between vertebrae comprising:  
2                     a spacer having a first end for contacting a first vertebrae and a  
3           beam extending from the first end; and  
4                     a base adapted to be mounted to a second vertebrae, with the  
5           beam mounted to the base.

1           2.     The implant of claim 1 wherein the beam has an elongated  
2     aperture therein and the elongated aperture receives a post extending from  
3     the base.

1           3.     The implant of claim 2 wherein a lock cooperates with the post  
2     of the base to secure the beam to the base.

1           4.     The implant of claim 1 wherein the beam can be mounted to the  
2     base in a plurality of positions.

1           5.     The implant of claim 1 wherein the end of the spacer has a  
2     cross-section that is one of circular, elliptical, oval and ovoid.

1           6.     The implant of claim 1 wherein the implant is positioned  
2     between the S1 and L5 vertebrae.

1           7.     An implant adapted to be placed between vertebrae comprising:  
2                     a spacer adapted to contact a first vertebra; and  
3                     a base having at least a flange adapted to engage a second  
4           vertebra and the spacer engaging the base.

1           8.     The implant of claim 7 wherein the implant is positioned  
2     between the S1 and L5 vertebrae.

1           9.     An implant adapted to be placed between L5 and S1 vertebrae  
2     comprising:  
3                     a body;

4 at least one hook extending from the body and adapted  
5 to allow the body to engage a S1 vertebra;

6 a beam extending from the body, wherein the beam has a distal  
7 end that contacts a L5 vertebra; and

8 a device that can secure the beam to the body.

1 10. The implant of claim 9 wherein:

2 at least part of the implant is comprised of a material selected  
3 from the group consisting of: polyetheretherketone,  
4 polyaryletheretherketone, and polyetherketoneketone.

1 11. The implant of claim 9 wherein:

2 at least part of the implant is comprised of a material selected  
3 from the group consisting of: polyetherketoneetherketoneketone,  
4 polyetheretherketoneketone, polyketone, and polyetherketone.

1 12. The implant of claim 9 wherein:

2 at least part of the implant is comprised of titanium.

1 13. The implant of claim 9 wherein the device can secure the beam  
2 to the body in a plurality of positions.

1 14. The implant of claim 9 wherein the distal end of the beam is  
2 bulbous.

1 15. The implant of claim 9 wherein the distal end of the beam is one  
2 of elliptical, ovoid, oval, and round.

1 16. The implant of claim 9 wherein the distal end of the beam  
2 provides a surface which is at an angle to the beam, which surface is adapted  
3 to engage the L5 vertebra.

1           17.    The implant of claim 9 wherein the distal end of the beam  
2 provides a surface that is adapted to spread a contact load between the L5  
3 vertebra and the distal end.

1           18.    The implant of claim 9 wherein the distal end of the beam is  
2 adapted to engage a spinous process of the L5 vertebra.

1           19.    The implant of claim 9 wherein the distal end of the beam is  
2 adapted to engage a spinous process of the L5 vertebra over a conforming  
3 contact area.

1           20.    The implant of claim 9 wherein the distal end of the beam  
2 includes a convex surface that is adapted to engage a spinous process of the  
3 L5 vertebra to spread the load between the distal end of the beam and the  
4 spinous process of the L5 vertebrae.

1           21.    The implant of claim 9 wherein the beam includes an elongated  
2 aperture and the device extends through the aperture and can be secured to  
3 the aperture in a plurality of positions in order to position the beam relative to  
4 the body in a plurality of positions.

1           22.    The implant of claim 9 wherein the body includes a first portion  
2 and a second portion with a beam platform located between the first and  
3 second portions and the beam platform spaced from the first and second  
4 portions in order to space the beam from the first and second portions.

1           23.    The implant of claim 22 wherein the hook extends from the first  
2 portion and another hook extends from the second portion.

1           24.    The implant of claim 22 wherein the device extends from the  
2 platform.

1           25.    The implant of claim 9 including a device that secures the base  
2 to the S1 vertebra.

- 1           26.    An implant adapted to be placed between vertebrae comprising:  
2                   a body;  
3                   at least one hook extending from the body to allow the body to  
4           engage a vertebra;  
5                   a beam extending from the body, the beam having a distal end  
6           that contacts a spinous process of another vertebra; and  
7                   a device that secures the beam to the body.
- 1           27.    The implant of claim 26 wherein:  
2                   at least part of the implant is comprised of a material selected  
3           from the group consisting of: polyetheretherketone,  
4           polyaryletheretherketone, and polyetherketoneketone.
- 1           28.    The implant of claim 26 wherein:  
2                   at least part of the implant is comprised of a material selected  
3           from the group consisting of: polyetherketoneetherketoneketone,  
4           polyetheretherketoneketone, polyketone, and polyetherketone.
- 1           29.    The implant of claim 26 wherein:  
2                   at least part of the implant is comprised of titanium.
- 1           30.    The implant of claim 26 wherein the device secures the beam to  
2           the body in a plurality of positions.
- 1           31.    The implant of claim 26 wherein the distal end of the beam is  
2           bulbous.
- 1           32.    The implant of claim 26 wherein the distal end of the beam is  
2           one of elliptical, ovoid, oval, and round.
- 1           33.    The implant of claim 26 wherein the distal end of the beam  
2           provides a surface which is at an angle to the beam, which surface is adapted  
3           to engage a L5 vertebra.

1           34.    The implant of claim 26 wherein the distal end of the beam  
2 provides a surface that is adapted to spread a contact load between a L5  
3 vertebra and the distal end.

1           35.    The implant of claim 26 wherein the distal end of the beam is  
2 adapted to engage a spinous process of a L5 vertebra.

1           36.    The implant of claim 26 wherein the distal end of the beam is  
2 adapted to engage a spinous process of a L5 vertebra over a conforming  
3 contact area.

1           37.    The implant of claim 26 wherein the distal end of the beam  
2 includes a convex surface that is adapted to engage a spinous process of a  
3 L5 vertebra in order to spread the load between the distal end of the beam  
4 and the spinous process of the L5 vertebrae.

1           38.    The implant of claim 26 wherein the beam includes an elongated  
2 aperture and the device extends through the aperture and can be secured to  
3 the aperture in a plurality of positions in order to position the beam relative to  
4 the body in a plurality of positions.

1           39.    The implant of claim 26 wherein the body includes a first portion  
2 and a second portion with a beam platform located between the first and  
3 second portions and the beam platform spaced from the first and second  
4 portions in order to space the beam from the first and second portions.

1           40.    The implant of claim 39 wherein the hook extends from the first  
2 portion and another hook extends from the second portion.

1           41.    The implant of claim 39 wherein the device extends from the  
2 platform.

1           42.    The implant of claim 26 including a device that secures the base  
2 to an S1 vertebra.

1        43.    An implant adapted to be placed between vertebrae comprising:  
2                a body having first and second portions with a platform located  
3                between and spaced and extending from the first and second portions;  
4                first and second hooks extending from the first and second  
5                portions respectively in a direction opposite to the direction that the  
6                platform extends from the first and second portion, wherein the hooks  
7                are adapted to engage a vertebra;  
8                a beam with a distal end having a surface adapted to contact a  
9                spinous process of a vertebra, which surface is at an angle to the  
10              beam; and  
11              a device that can selectively position the beam relative to the  
12              body in a plurality of positions.

1        44.    The implant of claim 43 wherein:  
2                at least part of the implant is comprised of a material selected  
3                from the group consisting of: polyetheretherketone,  
4                polyaryletheretherketone, and polyetherketoneketone.

1        45.    The implant of claim 43 wherein:  
2                at least part of the implant is comprised of a material selected  
3                from the group consisting of: polyetherketoneetherketoneketone,  
4                polyetherether-ketoneketone, polyketone, and polyetherketone.

1        46.    The implant of claim 43 wherein:  
2                at least part of the implant is comprised of titanium.

1        47.    The implant of claim 43 wherein the device secures the beam to  
2        the body in a plurality of positions.

1        48.    The implant of claim 43 wherein the distal end of the beam is  
2        bulbous.

1           49.    The implant of claim 43 wherein the distal end of the beam is  
2   one of elliptical, ovoid, oval, and round.

1           50.    The implant of claim 43 wherein the distal end provides a  
2   surface which is at an angle to the beam, which surface is adapted to engage  
3   a L5 vertebra.

1           51.    The implant of claim 43 wherein the distal end provides a  
2   surface that is adapted to spread a contact load between a L5 vertebra and  
3   the distal end.

1           52.    The implant of claim 43 wherein the distal end of the beam is  
2   adapted to engage a spinous process of a L5 vertebra.

1           53.    The implant of claim 43 wherein the distal end of the beam is  
2   adapted to engage a spinous process of a L5 vertebra over a conforming  
3   contact area.

1           54.    The implant of claim 43 wherein the distal end of the beam  
2   includes a convex surface that is adapted to engage a spinous process of a  
3   L5 vertebra in order to spread the load between the distal end of the beam  
4   and the spinous process of the L5 vertebra.

1           55.    The implant of claim 43 wherein the beam includes an elongated  
2   aperture and the device extends through the aperture and can be secured to  
3   the aperture in a plurality of positions in order to position the beam relative to  
4   the body in a plurality of positions.

1           56.    The implant of claim 43 wherein the device extends from the  
2   platform.

1           57.    The implant of claim 43 including a device that secures the base  
2   to an S1 vertebra.

1 58. An implant adapted to be placed between vertebrae comprising:  
2 a body having first and second portions with a platform located  
3 between and spaced and extending from the first and second portions;  
4 a hook extending from the base in a direction opposite to the  
5 direction that the platform extends from the first and second portion;  
6 the hook adapted to engage a vertebra;  
7 a beam with a distal end having a concave surface that is  
8 adapted to contact a spinous process of a vertebra, which concave  
9 surface is at an angle to the beam; and  
10 a device that can selectively position the beam relative to the  
11 body.

1 59. The implant of claim 58 wherein:  
2 at least part of the implant is comprised of a material selected  
3 from the group consisting of: polyetheretherketone,  
4 polyaryletheretherketone, and polyetherketoneketone.

1 60. The implant of claim 58 wherein:  
2 at least part of the implant is comprised of a material selected  
3 from the group consisting of: polyetherketoneetherketoneketone,  
4 polyetheretherketoneketone, polyketone, and polyetherketone.

1 61. The implant of claim 58 wherein:  
2 at least part of the implant is comprised of titanium.

1 62. The implant of claim 58 wherein the device secures the beam to  
2 the body in a plurality of positions.

1 63. The implant of claim 58 wherein the distal end of the beam is  
2 bulbous.

1 64. The implant of claim 58 wherein the distal end of the beam is  
2 one of elliptical, ovoid, oval, and round.



1           65.    The implant of claim 58 wherein the distal end of the beam  
2 provides a surface which is at an angle to the beam, which surface is adapted  
3 for engaging a L5 vertebra.

1           66.    The implant of claim 58 wherein the distal end of the beam  
2 provides a surface that is adapted to spread a contact load between a L5  
3 vertebra and the distal end.

1           67.    The implant of claim 58 wherein the distal end of the beam is  
2 adapted to engage a spinous process of a L5 vertebra.

1           68.    The implant of claim 58 wherein the distal end of the beam is  
2 adapted to engage a spinous process of a L5 vertebra over a conforming  
3 contact area.

1           69.    The implant of claim 58 wherein the distal end of the beam  
2 includes a convex surface that is adapted to engage a spinous process of a  
3 L5 vertebra in order to spread the load between the distal end of the beam  
4 and the spinous process of a L5 vertebrae.

1           70.    A method for inserting an implant between an L5 and S1  
2 vertebrae comprising the steps of:

3                   attaching a base of an implant on to the median sacral lamina of  
4 the S1 vertebra; and

5                   adjusting the position of a beam with a distal end relative to the  
6 base so that the distal end can contact a spinous process of an L5  
7 vertebra and so that there is a desired spacing between the L5 and the  
8 S1 vertebrae.

1           71.    The method of claim 70 including the step of removing a bony  
2 protuberance from the S1 vertebrae prior to attaching the base to the S1  
3 vertebra.

1           72. The method of claim 70 wherein the attaching step includes  
2 hooking the base over the S1 vertebra.

1           73. The method of claim 70 without altering the L5 or the S1  
2 vertebrae.

1           74. A method for inserting an implant between the vertebrae  
2 comprising the steps of:

3               attaching a base of an implant on to the lamina of the a first  
4 vertebra; and

5               adjusting the position of a beam with a distal end relative to the  
6 base so that the distal end can contact a spinous process of a second  
7 vertebra and so that there is a desired spacing between the vertebrae.

1           75. The method of claim 74 including the step of removing a bony  
2 protuberance from the first vertebra prior to attaching the base to the first  
3 vertebra.

1           76. The method of claim 74 without altering the first or second  
2 vertebrae.

1           77. An implant adapted to be placed between vertebrae comprising:  
2 a body;  
3 at least one hook extending from the body and adapted to allow  
4 the body to engage a vertebra;  
5 a spacer extending from the body;  
6 the spacer having a distal end that is adapted to contact a  
7 spinous process of another vertebra; and  
8 a device that can secure the spacer to the body.

1           78. A method of implanting a device between S1 and L5 vertebrae  
2 in a spine, the method comprising:  
3 a. exposing an affected region of the spine posteriorly;

4           b.     inserting a base of the device between the S1 and L5  
5 vertebrae so that a pair of flanges on the device engage an S1  
6 vertebrae;

7           c.     selecting a spacer;

8           d.     installing the spacer on the base;

9           e.     adjusting a position of the spacer between the vertebrae;

10          f.     securing the spacer to the base; and

11          g.     closing the wound.

1       79.    A method of adjusting an implant, the method comprising:

2           a.     accessing the implant with a cannula;

3           b.     loosening a nut on a shaft that holds a spacer onto a  
4 base of the implant; and

5           c.     sliding the spacer in one of an upper and lower direction  
6 to adjust a position of a bulbous end of the spacer between an S1 and  
7 L5 vertebrae.

1       80.    A kit for implanting an interspinous implant comprising:

2           a plurality of spacers having a bulbous end and a shaft  
3 extending therefrom;

4           a base that is adapted to engage an S1 vertebrae; and

5           a lock that secures one of the plurality of spacers onto a post  
6 extending from the base.

1       81.    A kit for implanting an interspinous implant comprising:

2           a plurality of spacers;

3           a shaft to engage a spacer selected from the plurality of  
4 spacers;

5           a base that engages a medial sacral lamina; and

6           a lock that secures the shaft onto a post extending from the base.